CHAPTER 2

Preparing for Installation

This chapter provides site planning and basic safety information for installing the Cisco Metro 1500 series system. It includes the following sections:

- Site Planning, page 2-1
- Preparing Your Site, page 2-3
- Safety Steps, page 2-6
- System Environment, page 2-6
- Electrical Safety, page 2-7
- Eye Safety, page 2-8

Warning **Before you install, operate, or service the system, read the *Site Preparation and Safety Guide*. This guide contains important safety information you should know before working with the system.**

Site Planning

This section describes site planning, which includes information on power requirements, equipment testing, preparing the site, and coordinating the installation process.

Note Certain electrical or environmental modifications might need to be made and verified before the equipment can be installed.

Power Requirements

The Cisco Metro 1500 series system is available in two versions:

- Universal, 110 to 240 VAC
  50 to 60 Hz, 2.5A
- -48 VDC

The DC-powered version requires a -48V battery-based supply. Table 2-1 describes the power requirements in different regions.

Table 2-1 Power Requirements

Region	Power Requirements
North America	110 VAC, 60 Hz
Europe	220 to 240 VAC, 50 Hz

Fiber-Optic Cable Testing

The input ports use multimode, single-mode, or a combination of both types of cables depending on the customer application. The output ports use single-mode cables only.

Remote Link Testing

The remote link must be tested to verify that it meets the specifications and to ensure proper operation.

The supplier of the fiber-optic cable may have a test report available. If no report is available, remote link tests must be performed to verify that parameters are within specifications. Table 2-2 lists the remote link tests required, the measurement the test is to be specified in, and the instrument required to perform the test.

Table 2-2 Remote Link Tests

Remote Link Test	Specified In	Instrument Required
Link optical loss at 1550 nm	Decibels referenced to 1 mW	Laser source at 1310 nm and 1550 nm and power meter or optical time domain reflectometer (OTDR)
Distance	Kilometers	OTDR
Return optical loss at 1550 nm	Decibels	Reflectometer or OTDR with reflectometer

Cord Selection for Operation in USA and Canada

Use a detachable electrical cord with national certification (type SVT or SJT). One end terminates in a NEMA-style attachment plug rated for supply voltage (120V or 240V), and the other end attaches to an IEC 320-type appliance coupler.

Warning **This unit might have more than one power cord. To reduce the risk of electric shock, disconnect the two power supply cords before servicing the unit.**

Preparing Your Site

This section describes the various tasks required for preparing your site for installation, and it indicates who (you or the Cisco authorized representative) is responsible for these tasks.

Shared Site Preparation Responsibilities

You and the Cisco authorized representative share the following site preparation responsibilities:

- Identify who will be installing and testing the system.
- Select an appropriate location for the system unit.
- Determine the cable routing paths and routing method (cable tray, conduit, or other means).
- Calculate the cable distance and optical budget, and order the cables.
- Install AC or DC power receptacles and circuits, if necessary.
- Prepare the floor.

Cisco Installation Responsibilities

The Cisco authorized representative is responsible for the following installation tasks:

- Reviewing the "Power Requirements" section on page 2-2 and the "Cisco Authorized Personnel Checklist" section on page 2-5.
- Installing the hardware at the designated location.
- Connecting all fiber-optic cables.
- Testing the hardware and communications link offline.

Note You and the Cisco authorized representative are jointly responsible for online testing.

Cisco Authorized Personnel Checklist

The Cisco authorized representative can use the following checklist to ensure that the site is ready for installation:

- Does the equipment location have an acceptable clearance for service?
- Are power receptacles located within 5 feet (1.5 m) of the unit and have they been tested for the proper voltage?
- Have fiber-optic interface cables been installed and clearly labeled?
- Has local input power been tested and confirmed to be within budget?
- Have local and remote lines been tested and shown not to exceed the optical budget?
- Are floor tile cutouts for cable access the right size?
- Does the site meet temperature and humidity specifications?
- Has the fiber communication network been tested?

Customer Responsibilities

In addition to providing the necessary support personnel to help with the installation, you are responsible for the following site preparation tasks:

- Review the “Power Requirements” section on page 2-2 and the “Customer Checklist” section on page 2-6.
- Purchase, install, and label the interconnecting fiber-optic cables between the system and the existing fiber-optic network.
- Test and record individual line losses.
- Provide the required electrical power, and ensure that receptacles are within 5 feet (1.5 m) of the system.
- Provide cutouts in the floor tiles for cable access.
- Provide online test jobs to verify the operation before actual production runs.

Customer Checklist

Use the following checklist to ensure that the site is ready for installation:

- Does each unit have the specified access clearance?
- Is each unit within 5 feet (1.5 m) of power receptacles?
- Are required fiber-optic cables available and clearly labeled?
- Are floor tile cutouts for cable access the right size?
- Has cable routing been determined and performed?
- Have personnel been allocated for installation and testing?
- Has interface cable installation been arranged?
- Has pilot online testing been formulated?
- Does site meet temperature and humidity specifications?

Safety Steps

To assure correct and reliable operation of the system, be sure to follow all warning and caution marks in this guide.

If any problems occur, stop operating the system and follow these steps:

Step 1 Turn the keyswitch to the off position.

Step 2 Disconnect the power cords at the rear of the unit.

Step 3 Call your customer service representative.

System Environment

Being careful to avoid humidity and dust, install the system horizontally in a clean environment. Air conditioning is required. Do not expose the system to direct sunlight or heat sources. Locate the system in a restricted area.

Warning **This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.**

Caution Any modifications to the site that are required for Cisco Metro 1500 Series system installation must comply with local building and electrical codes.

Electrical Safety

Before switching this Cisco Metro 1500 series system on, make sure that it has been properly grounded through the protective conductor of the AC or DC power connector to a power outlet with a protective ground contact.

Caution There are many points inside the system which can, if contacted, cause personal injury. Be extremely careful when opening the housing.

Any adjustments or service procedures that require operation of the system with the protective covers removed should be performed only by Cisco authorized service personnel.

If the system is not used as specified, the protection provided by the equipment could be impaired. This system must be used in a normal condition (in which all means for protection are intact) only.

The Cisco Metro 1500 series system operates with AC power ranging from 110 to 240 VAC or -48 VDC, depending upon the product version that you have ordered.

For operation in various countries, power cords specific to the country of operation will be supplied. For proper operation of the system, use the appropriate power cord.

Eye Safety

Warning **Class 1 laser product.**

Eye safety for the user of the system is guaranteed for both the remote and local output channel. Only remove the dust cover from the remote or local output channel (Tx) adapter for installation procedures.